



BreezeACCESS VL

BreezeACCESS VL Version 4.5

Release Notes

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1. Introduction

BreezeACCESS VL version 4.5 introduces new features and support of some new country codes.

For more details refer to the applicable sections in the System Manual and Country Codes documents.

Note: Starting on SW Version 4.5, units with HW Revision A will no longer be supported. Please refer to your local office to learn how you can grow with Alvarion to a newer version.

2. Frequency bands

The currently supported frequency bands:

- 5.8 GHz Band: 5.725–5.875 GHz (Universal Country Code with HW Revision C)/5.725–5.850 GHz (all other Country Codes)
- 5.4 GHz Band: 5.470–5.725 GHz
- 5.2 GHz Band: 5.150–5.350 GHz
- 5.3 GHz Band: 5.250–5.350 GHz
- 4.9 GHz Band: 4.900-5.100 GHz

3. New Country Codes (Regulatory Domains)

BreezeACCESS VL SW version 4.5 complies with the regulatory requirements of the following new Country Codes:

- FCC 5.4 GHz Country Code, including DFS support, available for units with HW Revision C and higher
- Australia 5.4 GHz and 5.8 GHz Country Codes, available for units with HW Revision C and higher

In addition, the following improvements were introduced:

- Support of DFS in the FCC 5.3 GHz band (all units with HW revision C and SUs with HW revision B are certified for full compliance with FCC regulations).
- Units with HW Revision C using the Universal 5.8 GHz Country Code can support the entire band from 5.725 to 5.875 GHz (was previously 5.725 to 5.850 GHz).
- UK 5.8 GHz Country Code was updated to enable higher EIRP of 36 dBm with 20 MHz channels and 33 dBm with 10 MHz channels

Note that after upgrade to SW version 4.5, the Re-Apply Country Code Values feature must be activated for these changes in existing Country Codes to take effect.

4. New Features and Improvements

Improved Control of the MIR/CIR Algorithm

The MIR Threshold Percent parameter determines the level of wireless link utilization above which the MIR/CIR mechanism is activated. This enables optimization of the overall sector's throughput according to the service levels (MIR/CIR) granted to the subscribers.

Note that configuring the new MIR Threshold % parameter to 0%, the system will behave the same as with SW version 4.0. Setting it 50%, the MIR/CIR will work like a system using SW version 3.x and setting it 100% the MIR/CIR will work like MIR Only.

Enhanced Support of Broadcast/Multicast Relaying

The Broadcast/Multicast Relaying feature has been enhanced, allowing now selection between four options to better support specific traffic types:

- Disable Broadcast/Multicast Relaying (existing option)
- Enable Broadcast/Multicast Relaying (existing option)
- Enable Only Broadcast Relaying (new option)
- Enable Only Multicast Relaying (new option)

Serial Number and ATE Status Information for Easier Inventory Control

The unit's Serial Number and ATE Test Results details are now available in both Telnet and SNMP.

Improved Search Mechanism in the MAC Address Database

The improved search mechanism provides enhanced and faster searching performance, especially when the database contains a relatively large number of entries.

Higher Maximum Uplink Rate for SU-I

The maximum rate (MIR and CIR maximal values) has been increased from 2048 Kbps to 4096 Kbps (same as SU-6).

Improved Aging Mechanism for SUs

The decision algorithm used for removal of SUs from the AU's Association Database has been improved. The current criteria for removing an SU from the list of associated SUs are:

- A SNAP frame is received from another AU indicating that the SU is now associated with the other AU.
- The SU failed to respond to 100 consecutive data frames transmitted by the AU and is considered to have "aged out".
- During the last 6 minutes (or more) the SU failed to respond to certain frames that typically are transmitted by the AU every 10 seconds. Since the sampling interval for this state is 10 minutes, it means that the decision to remove the SU from the Associations Database will take place between 6 to 16 minutes from the time the SU stopped responding to these "keep-alive" frames.

Reapplying the Country Code Parameters

The Country Code Re-apply feature enables verifying that after loading an updated Country Code the new values will take effect.

Note that following activation of the Re-apply Country Code Values option, all parameters that are affected by the Country Code (frequency parameters, transmit power parameters, DFS operation, modulation level parameters, burst mode parameters) revert to their factory default values and must be re-configured.

Better Default Values for Noise Immunity

The default value for the Pulse Detection Sensitivity has been changed to Low (unless DFS is enabled, forcing the value to High). Note that in units where DFS is not used, after upgrade to version 4.5 the value will be forced to Low regardless of its previous value.

5. BreezeCONFIG Configuration Utility Version 4.5

A new version of BreezeCONFIG that supports all the new features of BreezeACCESS VL version 4.5 is provided with the product. BreezeCONFIG SW will also be available in the customer service section of the Alvarion web site.

6. Documentation

The information in the release notes is complementary to the product documentation, provided with the products. BreezeACCESS VL documentation includes the System Manual for BreezeACCESS VL version 4.5, User Manual for BreezeCONFIG version 4.5, installation support documents, and release notes. All the documentation, including the latest release notes, is available in the customer service section of the Alvarion web site.

7. Compatibility and Interoperability

Version 4.5 is fully compatible with versions 2.0, 3.0, 3.1 and 4.0. Nevertheless, it is recommended to always upgrade existing equipment to the latest version.

If an SU with SW version 4.5 is used in a cell where the AU uses a lower SW version (or vice versa), the performance will be those available with the lower SW revision.

The SW package will be available in the customer service section of the Alvarion web site.

8. Important Notes

- BA VL plugged-in modules (AU-BS, and SU-E-BS) work only with BS-SH-VL chassis, and requires a VL power supply (BS-PS-AC/DC). BS-SH-VL chassis can be identified by the label “BreezeACCESS VL/II/XL/4900” on the chassis’s flange arms. AU-BS and SU-E-BS plugged in modules are identified by the label “BS-AU VL/4900”. VL AC and DC power supply units for the chassis are identified by the “BS-PS VL/4900”.
- BS-SH-VL chassis can host all GFSK (3Mbps) products at all frequencies. GFSK & VL modules can co-exist on the same chassis. However, they need different types of power supply.
- Although minimum output power is defined as -10 dB when configuring the Tx Power manually, when ATPC is enabled the SU’s output power may be less than this minimum.
- Extra care should be taken when configuring VLAN management and management IP filtering in order not to lose connectivity with unit. In case of connectivity loss, use the “restore default parameters” application to reset to factory values.

- In case data encryption is used, the maximum number of SUs that can be served by an AU is limited to 124 (512 when data encryption is not used). Note that when data encryption is needed, it must be used by all SUs served by the same AU, as well as by the AU itself. Please change the number of supported SU to 124 in order to enable the encryption mode.
- Upon downgrade from version 4.5 to version 3.0 or lower, all the information in the new Network Management IP Address Ranges table will be lost. Hence, management access may be lost if the unit was managed from an IP address that is on a subnet defined in the new tables.
- When upgrading from version 3.0 or lower to version 4.5, the high/low packet classification settings according to the old VLAN Priority Threshold or IP Precedence Threshold parameters will be lost. The new parameters are forced to the default value of 7, meaning no prioritization.
- When downgrading from version 4.5 to version 3.0 or lower the MIR value is changed to the default 14976 and can manually be set to any value up to the maximum of 32896.
- When Wireless Link Prioritization feature is activated the prevention of Low Priority Traffic Starvation is automatically disabled.
- Remote changes of the Maximum Modulation Level in an SU while Adaptive Modulation is disabled may lead to lose of connectivity with the unit. The recommended workaround is to enable Adaptive Modulation, reset the unit to apply the change, and then change the Maximum Modulation Level.
- Adaptive Modulation may not converge to best modulation in some setups with high variance in noise levels. In these cases better performances may be achieved with manual modulation settings (Adaptive Modulation Disabled).
- When using the Q-in-Q feature the units can be managed by a management station behind the AU only if the following conditions are met:
 - The unit can be managed only with tagged frames: VLAN ID – Management must be other than 65535 (None).

- To enable proper management, all units in a cell (the AU and all SUs served by it) must use the same VLAN ID - Management.
- The VLAN ID – Management must differ from the Customer's VLAN ID - Data.
- Upon upgrade to SW version 4.5 from a version 3.1 or lower the FTP Client IP Address and Subnet Mask no longer exist as configurable parameters and the unit's IP parameters are used instead. Upon downgrade from SW version 4.5 to version 3.1 or lower the FTP Client IP Address of the unit is automatically set to the same value as the IP Address of the device. In this case following warning message appears:

```
*** WARNING: Same 'Unit IP Address' and 'FTP Client IP Address!' ***  
*** 'FTP Client IP Address' ignored until change and reset! ***
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After downgrade it is recommended changing the FTP Client IP Address to 1.1.1.3 and the FTP Server IP Address to 1.1.1.4.

- SNMP management was checked with SNMPC version 5.1.11e.

9. Limitations & Known Issues

- Sensitivity may change slightly as a function of frequency (+/-2dB).
- Transmission power accuracy is +/-1dB above 8dBm @ antenna port (typical condition). At lower levels the accuracy is +/-3dBm, never contradicting regulations. At very low levels the use of ATPC may cause significant fluctuations in the power level of the transmitted signal. When operating at such low levels, it is recommended to disable the ATPC Option in the SU and to set the Transmit Power parameter to the average Tx Power level before the ATPC was disabled.
- In units operating in the 5.3 GHz band, the following rule must be met for full compliance with FCC regulations:
 - For units with HW Revision B, frequency 5270MHz should not be used with a 20 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs served by this AU, should not be set to a value above “17-

Antenna Gain” (The maximum allowed EIRP for 5270 MHz and 20 MHz bandwidth is 17 dBm).

- For units with HW Revision C, frequencies 5270 MHz, 5275 MHz and 5330 MHz should not be used with a 20 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs connected to this AU, should not be set to a value above “20-Antenna Gain” (The maximum allowed EIRP for 5270 MHz, 5275 MHz and 5330 MHz with a 20 MHz bandwidth is 20 dBm).
- For units with HW Revision C, frequency 5265 MHz should not be used with a 10 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs connected to this AU, should not be set to a value above “25-Antenna Gain” (The maximum allowed EIRP for 5265 MHz with a 10 MHz bandwidth is 25 dBm).
- In BreezeACCESS VL units operating in the 4.9 GHz Japan band (not B&B point-to-point) with a 10 MHz bandwidth, the following rules must be met for full compliance with regulations:
 - When operating at 4945 MHz, the Transmit Power parameter in the AU should not be set to a value above 11 dBm. The Maximum Transmit Power of the SU should not be set to a value above 10 dBm.
 - When operating at 5055 MHz, the Transmit Power parameter in the AU should not be set to a value above 13 dBm. The Maximum Transmit power of the SU should not be set to a value above 10 dBm.

This requirement, although not indicated in the certification document, is needed following the tests performed in the certification lab.

- The maximum number of SUs that can be served by an AU when Data Encryption is enabled is 124. The number displayed for the Maximum Number of Associations is the value configured for this parameter, which might be higher than the actual limit, indicated in the Show Air Interface Parameters display.
- When encryption is used by the Authentication Algorithm (Shared Key option), in large cells (more than 80 SUs) the association process may be relatively long.

- In units with HW Revision B, Burst Mode cannot be activated when using WEP for data encryption. In units with HW Revision B, the Burst Mode option will be “blocked” upon trying to enable it when using WEP for data encryption. This limitation does not apply to units with HW Revision C.
- The Country Code Learning by SU feature does not function with the default ESSID (ESSID1).
- MAC Address Deny/Allow List supports maximum 100 entries.
- Calculated distance in 10MHz channels might not be accurate when the AU and SUs do not run the same software version; If the AU uses SW version 4.5 and the SU(s) use SW version 3.1, the calculated distance might be higher by 10 km than the actual one. It is highly recommended to upgrade the entire cell to the same software version, or use manual cell distance mode.
- The following traps are not fully supported by the Trap Monitor of BreezeCONFIG:
 - Ethernet Broadcast/Multicast Limiter Threshold Exceeded: The number of packets that were dropped is not displayed.
 - Unsupported Subscriber Type (a subscriber unit that is not supported tries to associate with an AUS, which supports a maximum of 8 SU-3 and/or SU-6 units): The type of the unit that was rejected is not displayed.
- BreezeCONFIG does not support multiple configuration of frequency parameters and Spectrum Analysis.
- Limitations when using Alvarion’s Networking Gateway:
 - The Networking Gateway does not support VLANs. Hence, it cannot be managed from remote if VLAN Management is used by the SU.
 - When using DRAP, the DRAP TTL Retries parameter in the AU must be set to 255, since this is the value of the timeout in the Networking Gateway, which is not configurable.
- Current AlvariSTAR’s Device Driver 3.0 does not support the new features of versions 3.1, 4.0 and 4.5.